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intended for the same purpose as yours; but from some defects in its construction, it did not answer to my wish, and therefore I laid it aside. But I find all its deficiencies remedied in your machine; and have no doubt that when it comes into general use, it will be found of the greatest utility to the trade.

I am, Sir, &c. &c.

J. WALLACE.

JAMES DOWIE, Boot Maker,
4, *West Register Street.*

No. II.

FLOATING BRIDGE.

The LARGE SILVER MEDAL was presented to H. W. HOOD, Esq., Commander of His Majesty's Ship Hyperion, for a Floating Bridge; a Model of which has been placed in the Society's Repository.

His Majesty's Ship Hyperion, Newhaven,
March 3, 1828.

SIR,

THE Floating Bridge, which the accompanying plan and elevation represents, was constructed under the following circumstances; and has been in use, as the means of communication between His Majesty's ship Hyperion and the eastern boundary of Newhaven harbour, for two years.

The bed of the harbour in which the ship lies is about twenty feet below the base of the wall or river embankment; but when she took up her present situation (about three years since), the mud between her and the wall was so soft that it was quite impassable; consequently there was no means of landing but at high water by boats, when the mud was overflowed. This being very inconvenient for keeping up a communication with the eastern line of the service, on which the ship is employed, it occurred to me, that, with the materials to be found on board all ships of war, a bridge might be constructed that would obviate all local difficulties. Accordingly, two lengths of the bower chain cable were placed parallel to each other over the mud, and at right angles with the ship's length, as seen at *a a a*, Plate V., under the casks, and her fish davits, *b b*, were sunk in the mud as posts, to set the cables up to; at the extreme ends from the piles near the ship, the casks were placed on them with grummet slings (snaked); two parallel lengths of the stream chain-cable, *c c c*, were carried over the casks, and the ship's gratings were then placed on the upper part, from cask to cask. Finding that the buoyancy of the casks was still more than sufficient for the weight of the chains and gratings, besides any reasonable weight that might be required to be transported over them, the whole was made as secure as possible by lashings; and the ship's spare capstan-bars, *d d d*, were nailed on to filling pieces, fastened to the headings of each alternate cask, some spare rope being rove through the swifter holes, to act instead of a rail on each side. The utility of the bridge, for this particular situation of one of his majesty's ships, stands thus, and might hereafter prove useful to other vessels under a variety of circumstances:—At low water, when the tide has forsaken the mud bank of the river, a dry and sure footing for the people required to pass over it is insured, as the casks then lie on the mud, and form the supporters of the gratings; and when the tide is in, the buoyancy of the casks supports the bridge afloat; thus setting the boats at liberty for any other service that may be required.

In Newhaven harbour there is a rise and fall of twenty-two feet water (at full and change); and after the bridge was constructed, the most convenient method of descending to it when the ship was afloat became an object of consideration; accordingly, a stage, *e e*, was run out from the starboard gangway, to which was suspended a long ladder, *f*, and as the ship is moored head and stern, the ladder necessarily rises and falls with her as the tide is flowing or receding. There are weights, *g*, near the ship's side, suspended by ropes, *h h*, which lead from the upper chains of the bridge through sheeve holes cut in the stanchions of the platform *e*, and thus is produced a constant and tight man-rope. Another ladder, *k*, for landing, is placed at the other end against the embankment, *l l*. *m m* is the mud bank; *n n* part of the ship's deck.

That the situation of his majesty's ship Hyperion may be clearly understood, it is necessary farther to state, that where the bridge is situated there is a bed of mud, common to most harbours, alongside of which were driven, by the commissioners of the harbour, piles, *i i*, to keep her off the same in strong westerly winds, the breast mooring chains (not shewn in the drawing) keeping her from going too far from the piles in easterly winds, and the fore and aft cables and spring from going ahead or astern too much.

In this mud we have cut ponds or combers, *j j*, for mooring our boats out of the way of the vessels navigating the river; and as the tide, on ebbing, leaves the ponds always full of water, they remain uninjured from the effects of the sun. The inner embankment, or wall, secures the adjoining meadows from being overflowed at high tides. With respect to the bilge-ways that are attached to the ship's bottom, I should wish it to be clearly understood, that they were fitted at Sheerness dock-yard by directions of the navy board, for the purpose of keeping the ship upright when aground, on her being appropriated to this service; the bridge and ladder, constructed from materials always to be found on shipboard, being the only things I set forward as my own plan and invention.

I am, Sir, &c. &c.

W. H. Hood,
Commander, Royal Navy.

A. Aikin, Esq.
Secretary, &c. &c.

It is probable that the floating bridge above described would be found very useful on all occasions where ships of war are so stationed as to have their communication with the shore, or with other vessels, obstructed at low water by banks of impassable mud. It was stated at the committee by a naval officer, that during the late war, the receiving ship at the Pill, below Bristol, was inaccessible for some hours every tide in consequence of the mud banks. At that time the officer in question commanded a small ship of war employed in conveying men from the receiving ship; and much time was lost, and inconvenience incurred, from the want of communication. This might have been avoided by the use of a floating bridge similar to that invented by Commander Hood.